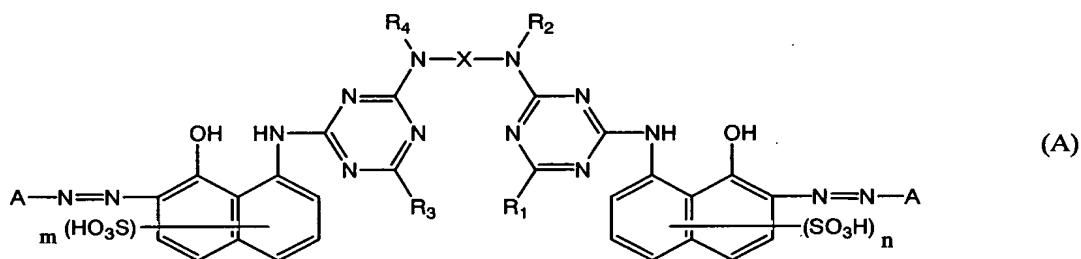
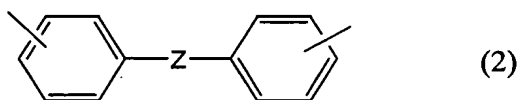


CLAIMS

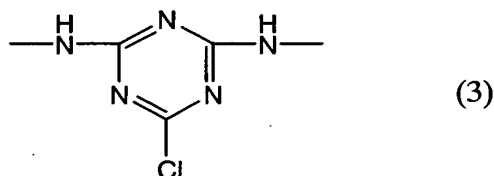
1. Aqueous ink for ink jet recording comprising a coloring matter and an aqueous medium as main components, in which at least one of dyes represented by the formula (A) or their salts is contained as the coloring matter.



[wherein R_1 and R_3 , independently from each other, represent a hydrogen atom, a hydroxyl group or a halogen atom, R_2 and R_4 , independently from each other, represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted aryl group or an optionally substituted aralkyl group, A represents a phenyl group or a naphthyl group (the phenyl group or the naphthyl group may be substituted with any of a halogen atom, a hydroxyl group, an amino group, an optionally substituted alkyl group, an alkoxy group, a carboxyl group, a carboxylic acid ester group, a carboxylic acid amide group, a sulfonic acid group and a sulfonic acid amide group), X represents an alkylene group, a phenylene group, a xylylene group, a naphthylene group, a biphenylene group or a divalent bonding group represented by the formula (2)



in which Z represents -CO-, -NHCONH-, -NHCSNH- or formula (3)



(these bonding groups may be substituted with a halogen atom, an alkyl group, an alkoxy group, a hydroxyl group, an amino group, a carboxyl group or a sulfonic acid group), and m and n, independently from each other, represent an integer of 1 to 4].

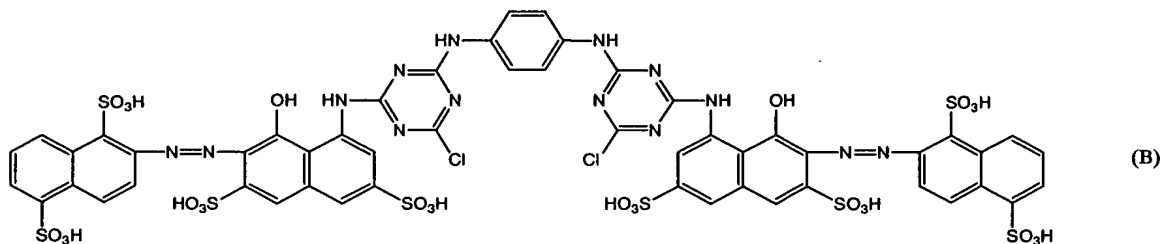
2. The aqueous ink for ink jet recording according to claim 1, wherein in the formula (A), at least one of R_1 and R_3 is a halogen atom.

3. The aqueous ink for ink jet recording according to claim 1 or 2, wherein in the formula (A), X is an optionally substituted phenylene group.

4. The aqueous ink for ink jet recording according to any one of claims 1 to 3, wherein in the formula (A), A is a naphthyl group (the naphthyl group may be substituted with any of a halogen atom, a hydroxyl group, an amino group, an optionally substituted alkyl group, an alkoxy group, a carboxyl group, a carboxylic acid ester group, a carboxylic acid amide group, a sulfonic acid group and a sulfonic acid amide group).

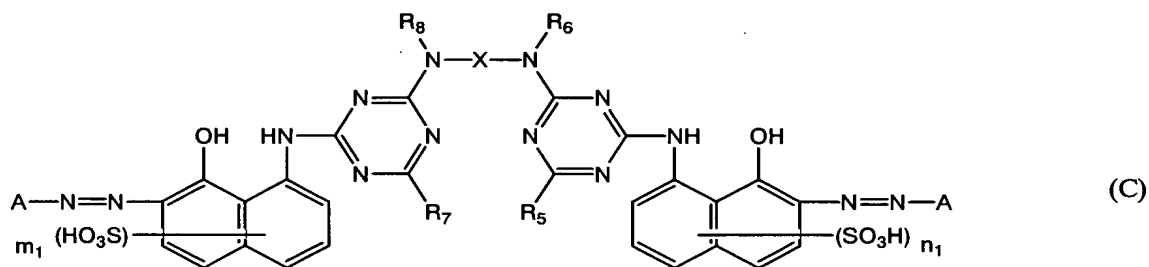
5. The aqueous ink for ink jet recording according to claim 1, wherein the dyes are dyes represented by the formula

(B)



or their salts.

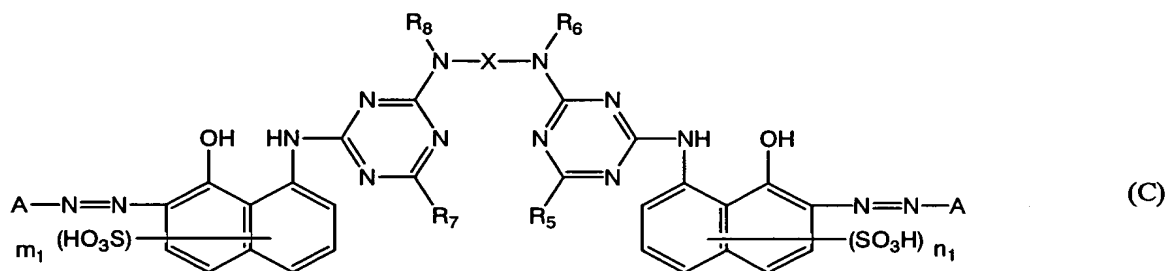
6. Aqueous ink for ink jet recording, wherein a dye contains at least one of the dyes represented by formula (B) according to claim 5, other dyes represented by the formula (C)



[wherein R_5 and R_7 , independently from each other, represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted alkoxy group, an amino group, an alkylamino group, a hydroxyl group or a halogen atom, R_6 and R_8 , independently from each other, represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted aryl group or an aralkyl group, A represents a phenyl group or a naphthyl group (the phenyl group or the naphthyl group may be substituted with any of a halogen atom, a hydroxyl group, an amino group, an optionally substituted alkyl group, an alkoxy group, a carboxyl group, a carboxylic acid ester group, a carboxylic acid amide group, a sulfonic acid group and a sulfonic acid amide group),

X represents a divalent bonding group, and m_1 and n_1 , independently from each other, represent an integer of 1 to 4] or their salts.

7. A process for producing a dye, which comprises dissolving a dye represented by the formula (C) or its salt in water, and adjusting pH of the aqueous solution to 9 or more to remove insoluble matters formed.



[wherein R_5 and R_7 , independently from each other, represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted alkoxy group, an amino group, an alkylamino group, a hydroxyl group or a halogen atom, R_6 and R_8 , independently from each other, represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted aryl group or an aralkyl group, A represents a phenyl group or a naphthyl group (the phenyl group or the naphthyl group may be substituted with any of a halogen atom, a hydroxyl group, an amino group, an optionally substituted alkyl group, an alkoxy group, a carboxyl group, a carboxylic acid ester group, a carboxylic acid amide group, a sulfonic acid group and a sulfonic acid amide group), X represents a divalent bonding group, and m_1 and n_1 , independently from each other, represent an integer of 1 to 4].

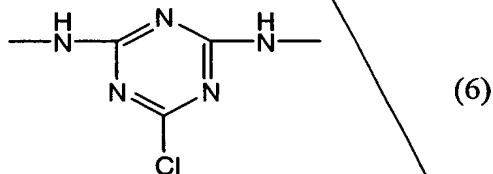
8. A process for producing a dye, which comprises, after dissolving the dye represented by the formula (C) as recited in claim 7 or its salt in water to form the aqueous solution, mixing the aqueous solution with a water-soluble organic solvent to crystallize the dye.

9. A process for producing a dye, which comprises mixing the aqueous solution obtained by dissolving the dye represented by the formula (C) as recited in claim 7 or its salt in water and adjusting pH of the aqueous solution to 9 or more to remove insoluble matters formed, with a water-soluble organic solvent to crystallize the dye.

10. The process for producing the dye according to any one of claims 7 to 9, wherein in the formula (C), X is an alkylene group, a phenylene group, a xylylene group, a naphthylene group, a biphenylene group or a divalent bonding group represented by the formula (5)



in which Z represents an oxygen atom, a sulfur atom, -CO-, -NHCONH-, -NHCSNH-, -CH=CH- or the formula (6)



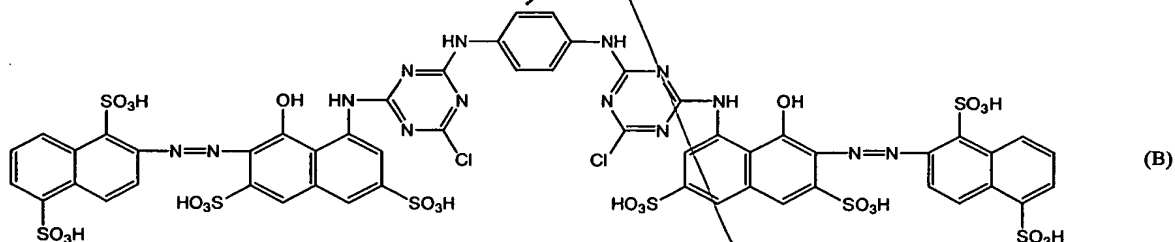
(these bonding groups may be substituted with a halogen atom, an alkyl group, an alkoxy group, a hydroxyl group, an amino group,

a carboxyl group or a sulfonic acid group).

11. The process for producing the dye according to any one of claims 7 to 9, wherein in the formula (C), X is an optionally substituted phenylene group.

12. The process for producing the dye according to any one of claims 7 to 9, wherein in the formula (C), A is a naphthyl group (the naphthyl group may be substituted with any of a halogen atom, a hydroxyl group, an amino group, an optionally substituted alkyl group, an alkoxy group, a carboxyl group, a carboxylic acid ester group, a carboxylic acid amide group, a sulfonic acid group and a sulfonic acid amide group).

13. The process for producing the dye according to any one of claims 7 to 9, wherein the dye is a dye represented by the formula (B)



or its salt.

14. Aqueous ink for ink jet recording characterized by containing at least one of the dyes produced by the process according to any one of claims 7 to 13.

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